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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/896,162	06/29/2001	Richard Henry Dee	2001-020-TAP	7431

7590 03/27/2003  
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EXAMINER

CASTRO, ANGEL A

ART UNIT	PAPER NUMBER
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2653

DATE MAILED: 03/27/2003

4

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/896,162

Applicant(s)

DEE, RICHARD HENRY

Examiner

Angel A. Castro

Art Unit

2653

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 June 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All   b) ☐ Some \*   c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2, 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

## DETAILED ACTION

### *Drawings*

1. Figure 10A should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### *Specification*

2. The disclosure is objected to because of the following informalities: in page 24, line 8, "1160" should be changed to --1110--.

Correction is required.

### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not clear from claims 1, 5, 11 and 15, what means "one fixed layer" since all the layers are fixed to a substrate or if they mean fixed magnetically.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-4 and 11-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Gill (U.S. Pat. 5,828,529).

Regarding claims 1 and 11, as far as it is understood, Gill discloses a reduced sensitivity spin valve sensor apparatus (figures 8-9), comprising:

at least one fixed layer 118; and

at least one free layer 110, wherein the flux carrying capacity of the spin valve sensor is increased above standard spin valve sensors (having a thickness of 50 angstroms), to reduce the sensitivity of the spin valve sensor (column 2, lines 32-37).

Regarding claims 2-3 and 12-13, Gill discloses that the carrying capacity of the spin valve sensor is increased by increasing a thickness of the at least one free layer above 60 angstroms or between 90 and 120 angstroms, inclusively (column 2, lines 32-37)

Regarding claims 4 and 14, it is inherent in the reference to Gill that the flux carrying capacity of the spin valve sensor is increased above standard spin valve sensors such that an amount by which a free layer moment rotates for a given flux input is decreased (column 2, lines 32-37).

7. Claims 5-10 and 15-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Pokhil (U.S. Pat. 6,181,533).

Regarding claims 5 and 15, as far as it is understood, Pokhil discloses a reduced sensitivity spin valve sensor apparatus (figure 1), comprising:

at least one fixed layer 50; and at least two free layers 54 and 62.

Regarding claims 6 and 16, Pokhil shows at least one non-magnetic spacer 52 positioned between the at least one fixed layer 50 and one of the at least two free layers 54.

Regarding claims 7 and 17, Pokhil shows that the at least one fixed layer includes at least two fixed layers 50 and 58 having a magnetic orientation approximately 90 degrees from a magnetic orientation of the at least two free layers.

Regarding claims 8 and 18, Pokhil shows that the at least one fixed layer includes at least two fixed layers 50 and 58, and wherein the at least two free layers 54 and 62 are positioned between the at least two fixed layers.

Regarding claims 9 and 19, Pokhil shows that the at least two fixed layers and the at least two free layers are spaced from one another by three non-magnetic spacers 52, 46, 60.

Regarding claims 10 and 20, it is inherent in the reference to Pokhil that the magnetic flux is distributed across the two free layers to thereby reduce a magnetic flux fed to each free layer.

### *Conclusion*

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Beach et al (U.S. Pat. 6,449,134) discloses a read head with file resettable dual spin valve sensor; Chau et al (U.S. Pat. 6,437,950) discloses a top spin valve sensor; Gill (U.S. Pat. 6,185,079) discloses a magnetic tunnel junction sensor; Mauri (U.S. Pat. 5,856,897

Art Unit: 2653

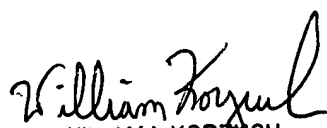
and 5,768,069) discloses a self-biased dual spin valve sensor; Cain et al (U.S. Pat. 5,493,467) discloses a yoke spin valve MR read head.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angel A. Castro whose telephone number is 703-308-8435. The examiner can normally be reached on Monday through Thursday, 8 AM to 6 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William R. Korzuch can be reached on 703-305-6137. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-308-8435 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

Angel Castro, Ph.D.  
March 21, 2003

  
WILLIAM KORZUCH  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600